

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

RECREATION USE SURVEY OF
BIG GRIZZLY CREEK, PLUMAS COUNTY
1991

Technical Information Report No. 92-2

Prepared under the supervision of

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by

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This report was prepared to summarize information collected under Work Order 1501-0100 to document recreation and fishery enhancement provided by a revised operation of Lake Davis. This report has received only limited review; it is intended for internal use and should be considered preliminary and subject to revision.

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SUMMARY

A survey of streamside recreation along Big Grizzly Creek, Plumas County, was conducted in 1991. The purpose of the survey was to estimate the amounts and types of recreation use and angler success occurring along the creek with augmented flow from Lake Davis through Grizzly Valley Dam. The stratified random sample survey combined roving use counts with interviews of recreators in order to gather information on recreation activities, visitor origin, and angler success.

There were an estimated 3,700 hours of recreation use on Big Grizzly Creek between April 27 and November 15, 1991. The most frequently observed activities were fishing, swimming and beach use, and relaxing. About 67 percent of all visitors and 79 percent of all anglers lived in the northeast counties of California, mostly Plumas County. A large proportion of anglers and visitors lived in the City of Portola. Anglers caught an estimated 500 rainbow trout in 800 hours of fishing.

INTRODUCTION

Big Grizzly Creek below Grizzly Valley Dam offered an opportunity to implement the Department of Water Resources' water management policy, adopted in 1975, which states, "Instream uses for recreation, fish, wildlife, and related purposes shall be balanced with other uses." When Grizzly Valley Dam began operation in 1966, streamflows in Big Grizzly Creek below the dam were increased and stabilized. Minimum flows were increased from about 0.5 cubic foot per second (cfs) to 8 cfs. Fishing and related streamside recreation were enhanced. An instream flow needs assessment later indicated that increasing flows to 20 cfs would further increase trout habitat over the post-project levels to near optimum levels without significant detriment to lake recreation (Haines, 1982).

On a trial basis, Grizzly Valley Dam began a revised operation in June 1982. The Department of Fish and Game proposes to further revise operating criteria and releases during 1993 or 1994. Monitoring downstream recreation use, fish populations, and trout catch will document changes to these uses caused by the modified flow release schedules.

This report describes the recreation use survey, creel census, and results for the 1991 trout season, April 27 to November 15. A separate report, prepared by the Department of Fish and Game, Contract Services Section, describes a fish population survey conducted in August 1991 (Brown, 1992).

Description of Study Area

Big Grizzly Creek is a major tributary of the Middle Fork Feather River (a designated National Wild and Scenic River) within the Plumas National Forest. About 6 miles of the creek is below Grizzly Valley Dam and Lake Davis. From an elevation of 5,670 feet, the creek drops through steep-walled canyons

flows through the eastern edge of Smith Peak State Game Refuge crosses under Highway 70 about 2 miles east of the City of Portola and joins the Middle Fork Feather River on the western side of Sierra Valley at an elevation of 4,870 feet (Figure 1).

Grizzly Road, which also crosses Highway 70, roughly parallels the creek, providing easy access to the mouth of the creek and to Lake Davis. About 3.8 miles upstream from the mouth is a dirt road, called Burnham Ranch Road, which provides public access to some of the more rugged areas of the creek.

About 1984, DWR purchased a strip of land along Big Grizzly Creek for public fishing access, making the public access area below the dam nearly three miles long. Overall, about 4.25 miles of the 6.25-mile reach of Big Grizzly Creek below Grizzly Valley Dam is typically used by anglers and other recreationists, although about one mile of the area used is privately owned and usually posted against trespass. The remaining two miles of the creek are generally inaccessible and/or clearly posted against trespass.

Public access is prohibited at Walton's Grizzly Lodge, a camp for children at the "Grizzly Ice Pond". The camp uses the pond for fishing and swimming and the surrounding area for other camp activities. This use was not measured and is not included in our estimates.

Among other things, Big Grizzly Creek provides visitors with opportunities for trout fishing (predominantly rainbow trout), walking and hiking, flora and fauna study, relief from summer heat in the form of swimming and wading, and enjoyment of fall colors.

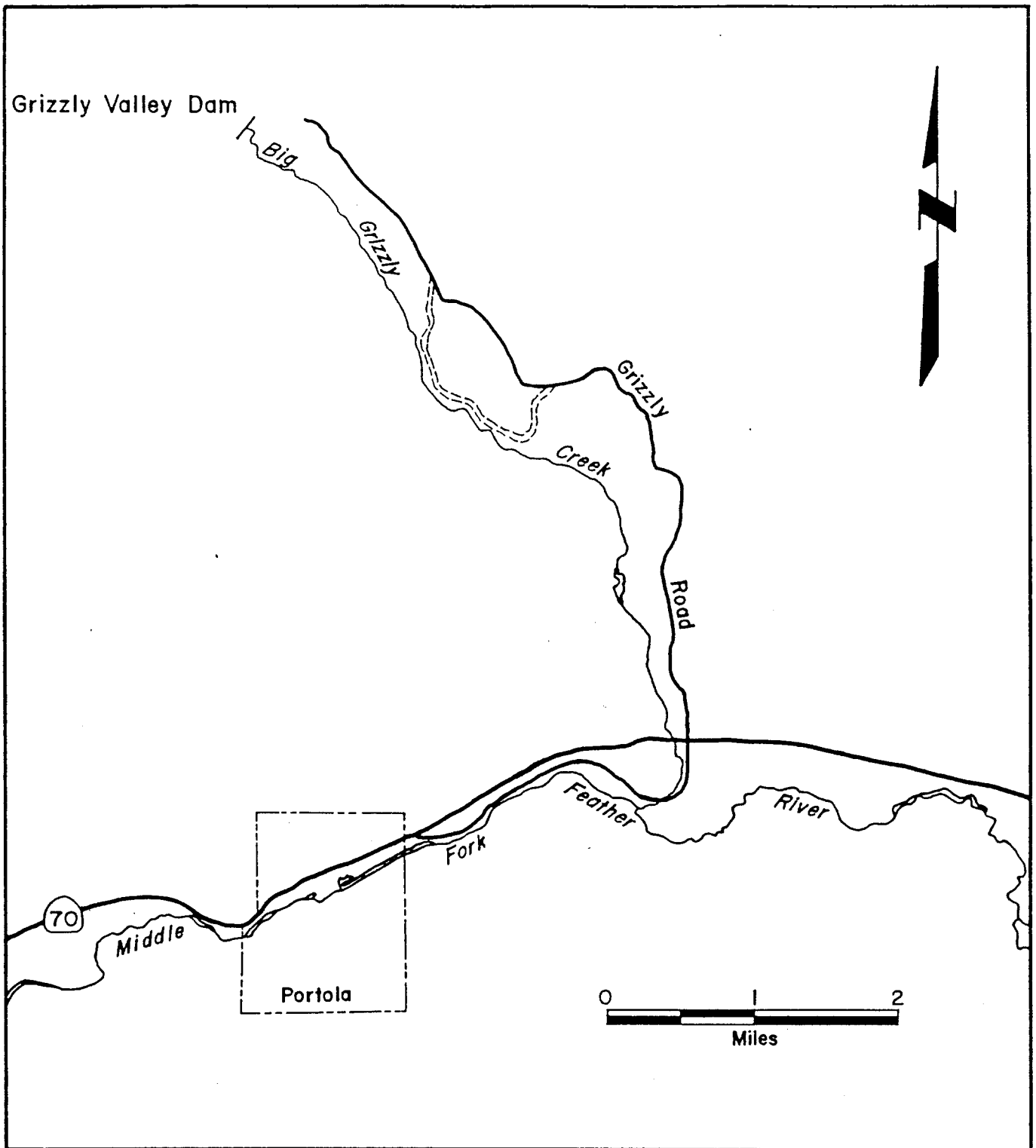


Figure 1- Big Grizzly Creek, Plumas County, 1991

The general area has a rich history of gold mining, farming and ranching, lumber production, and railroading. In recent decades, recreation use has increased greatly, with water-related uses a major attraction. Employment today is divided among services, government, timber harvesting, ranching, and farming.

Grizzly Valley Dam was built as part of the State Water Project in 1966. Originally planned to supplement irrigation in Sierra Valley, it was completed mainly to benefit reservoir recreation and the fishery downstream in Big Grizzly Creek, and to provide domestic water to the City of Portola. Releases for recreation, fish, and wildlife are based on the water surface elevation on May 1. In addition to the releases for downstream fisheries and water rights, the reservoir is operated to prevent spill. This requires large releases of up to 250 cfs in the early spring of some years (DWR, 1974).

METHODS

Recreation Use Counts

Use counts were made on randomly selected dates within nine survey strata using the optimum allocation method described by Abramson and Tolladay (1959). Twenty-eight days of the 203-day period from April 27 through November 15, 1991, were surveyed; both days of the opening weekend of trout season, 4 of 10 holiday weekend days, 13 of 141 weekdays, and 9 of 48 weekend days. Five one-hour counts of recreation use were made in the study area each day at regular periods, scheduled according to the number of daylight hours (Appendices I and II).

The surveys were made from vehicle or on foot, as necessary, to check access and recreation sites. Recreationists (and their vehicles) were counted and recorded by recreation activity. The five daily counts were totaled and multiplied by factors that accounted for recreation use in the daylight periods not counted. Similarly, the resulting daily figures were expanded to estimate total recreation hours for all days in each stratum. Adding the stratum totals provided an estimate of recreation hours for the study period.

Creel Census

Anglers along Big Grizzly Creek were contacted on 28 days to determine fishing success. The county of residence and length of time spent fishing so far that day were recorded for each angler contacted. Fish censused were counted, measured (fork length to nearest 0.5 cm), and identified to species.

To determine total catch, the catch per hour was multiplied by estimated hours of fishing for each stratum and the totals for each stratum were summed. Total weight of trout

RESULTS

Recreation Use

Total recreation use on Big Grizzly Creek was estimated at 3,700 recreation hours ($\pm 2,000$ hours) for the period April 27 to November 15, 1986.

Counts of people along Big Grizzly Creek indicated that, overall, swimming and wading was the major activity, followed by fishing, walking, and relaxing (Table 1).

Table 1. Recreation Hours by Activity
Big Grizzly Creek, 1991

	<u>Recreation Hours</u>	<u>Percent</u>
Swimming and beach use	1000	27
Fishing	800	22
Walking	400	11
Relaxing	200	5
Sight seeing	200	5
Miscellaneous/other*	<u>1100</u>	<u>30</u>
Total	3700	

* Includes sightseeing, picnicking, children playing, camping, shooting, and off-highway vehicle use.

Sixty-one interviews were conducted this year, representing 135 people. The interviews revealed what people said they did during their visit. About 39 percent of the visitors to Big Grizzly Creek said they fished, followed by swimming/wading (18 percent), relaxing (4 percent), picnicking (3 percent), sightseeing (8 percent), beach use (3 percent), walking for pleasure (7 percent), and miscellaneous other activities (4 percent). These percentages add up to more than

caught was calculated from estimated total fish caught and application of the length-weight relationship formula for Big Grizzly Creek trout (Brown, 1992).

100 percent because many people took part in more than one activity.

About 72 percent of the visitors were day users (i.e., returned home at night), 28 percent stayed overnight somewhere in the area (usually at Lake Davis or a commercial facility in Portola). No visitors camped along the creek (not strictly legal), though some have been observed in past years. Visitor origin was predominantly from the northeast counties (67 percent), with 64 percent coming from Plumas County. Visitors from out of state totaled 25 percent of all users, with residents of the city of Reno representing 19 percent. Sacramento valley visitors made up 7 percent while one percent came from the Bay Area.

Creel Census Data and Angler Success

During the 1991 trout season, 41 anglers were contacted. They had fished 70.5 hours, with a recorded catch of 33 rainbow trout (Oncorhynchus mykiss), and no brown trout (Salmo trout). In addition, 68 trout were reported to have been caught and released.

Total angling use was estimated at 800 hours (± 140 hours) or 347 angler days, with an estimated catch of 500 rainbow trout. Based on trout reported caught and reported caught and released, an additional 700-800 trout were estimated to have been caught and released.

The mean length of rainbow trout caught during 1986 was 21.3 cm (8.4 in) with a range of 18.0 to 38.0 cm (7.1 to 15.0 in) (Appendix III). An estimated 163 pounds of rainbow trout were caught. The largest fish caught measured 38 cm (15.0 in) in length. Thirty-two other fish measured from 18 to 30.5 cm (7.1 to 12.0 in). Eight of these were caught on opening weekend.

Big Grizzly Creek angler origin (Figure 3) was predominantly from the northeast counties (79 percent), all of which were from Plumas County. Residents of the city of Portola made up about 55 percent of all anglers. Anglers from the city of Reno totalled 21 percent.

About 41 percent of the anglers fished with bait, about 21 percent with lures, about 5 percent with flies, and about 26 percent used more than one type of terminal gear during their effort. All of the people fishing said they were fishing for trout.

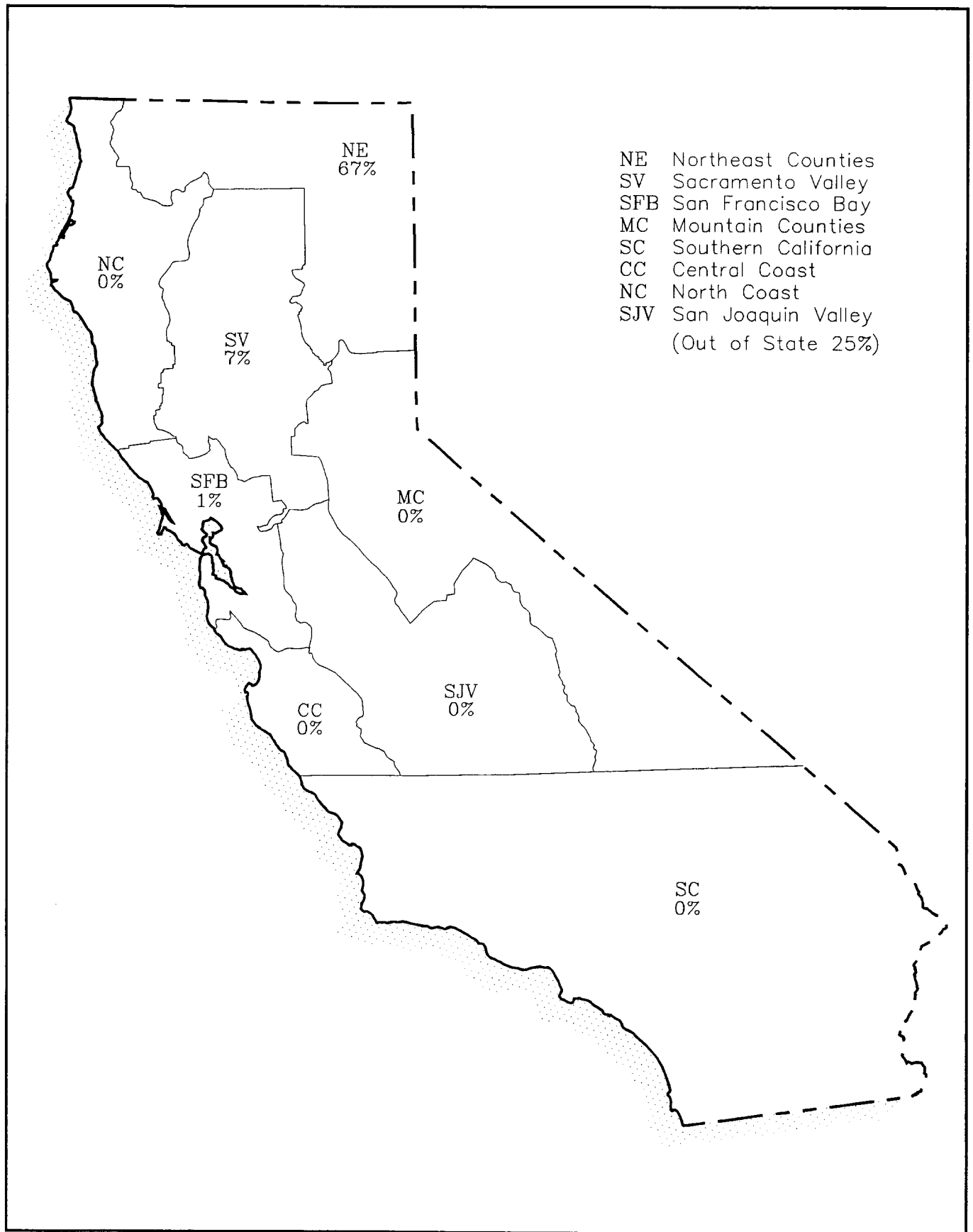


Figure 2 — Big Grizzly Creek Visitor Origin by County Groups
1991

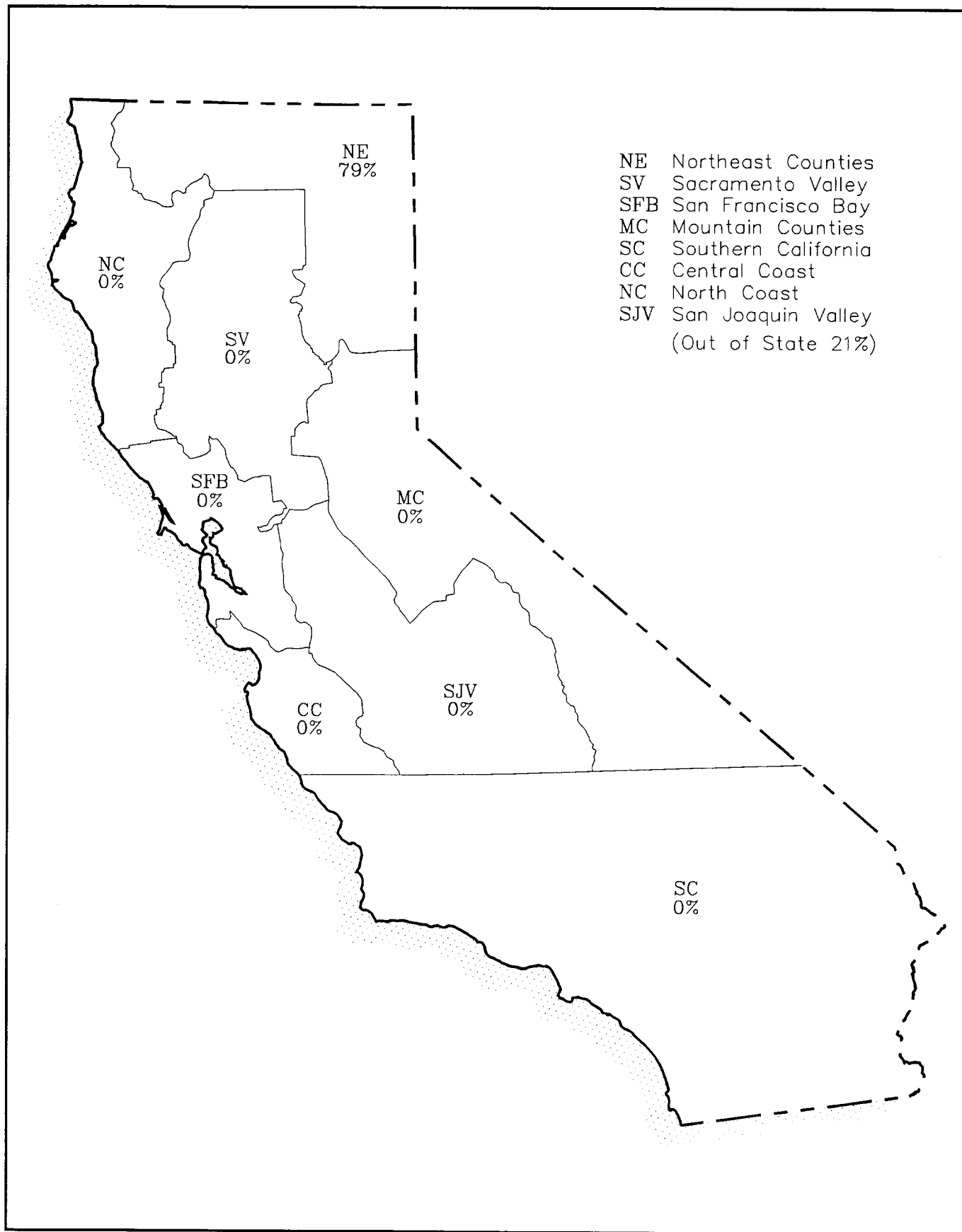


Figure 3 — Big Grizzly Creek Angler Origin by County Groups
1991

DISCUSSION

Counts and Creel Census

Most people using the creek were readily observed during the use counts. Vehicle access points were checked on each count, and people were found for nearly all vehicles. Vehicles of U. S. Forest Service and DWR workers and other non-recreationists are sometimes parked along the road, normally making vehicle counts a poor index of recreation use. However, with the relatively low use in 1991, we were able to associate nearly every vehicle with people on the creek. About 9 percent of the estimated fishing use was represented in the creel census.

Comparison With Use in 1986

Comparison of the 1991 data with a previous survey conducted on Big Grizzly Creek in 1986 shows some general similarities and differences. Patterns of recreation use and fishing at Big Grizzly Creek apparently have changed over the last five years. The 1991 recreation survey reflected much lower use than in 1986; 3,700 recreation days in 1991 versus 4,400 in 1986. Five years of drought resulting in low stream flows, and development along Big Grizzly Road and along the creek, may have had significant effects on the amount of recreation use along the creek.

During the 1986 trout season, anglers fished an estimated 2,900 hours with an estimated catch of 2,300 rainbow trout and 50 brown trout. A substantial decrease in angling use was recorded in 1991 with an estimated 800 hours of fishing and an estimated catch of 500 rainbow trout and no brown trout. All stratum showed some decrease in fishing use, however, the greatest drop was during opening weekend, Memorial Day weekend, and the early spring.

ACKNOWLEDGEMENTS

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Thanks to Michael Serna for preparing the figures and Lori Miles who typed the text and tables.

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APPENDIX I

RECREATION SURVEY SCHEDULE FOR BIG GRIZZLY CREEK, PLUMAS COUNTY APRIL 27, 1991, TO NOVEMBER 15, 1991

<u>Big Grizzly Creek Survey Dates</u>	Holiday = HD Weekend = WE <u>Weekday = WD</u>	<u>Survey Strata</u>
April 27	WE	I
April 28	WE	I
May 3	WD	IV
May 10	WD	IV
May 11	WE	III
May 14	WD	IV
May 19	WE	III
May 25	HD	II
May 26	HD	II
June 4	WD	IV
June 9	WD	IV
June 18	WE	III
June 22	WE	III
June 28	WD	IV
July 3	WD	VI
July 4	HD	IX
July 14	WE	V
July 19	WD	VI
July 27	WE	V
July 29	WD	VI
August 7	WD	VI
August 18	WE	V
August 20	WD	VI
September 2	WD	IX
September 15	WE	VII
September 25	WD	VIII
October 21	WD	VIII
November 2	WE	VII

APPENDIX II

1991 USE COUNT SCHEDULE FOR BIG GRIZZLY CREEK

<u>Date</u>	<u>Daylight Hours</u>	<u>Use Count</u>		<u>Creel Census Time (approx.)</u>
		<u>Count</u>	<u>Time</u>	
April 27-28 PDT	15-1/2	1st	0730-0830	0830-1300
		2nd	1000-1100	1400-1800
		3rd	1300-1400	
		4th	1530-1630	
		5th	1830-1930	
May-August PDT	16-1/2	1st	0700-0800	0800-1300
		2nd	1000-1100	1400-1900
		3rd	1300-1400	
		4th	1600-1700	
		5th	1900-2000	
September PDT	14	1st	0730-0830	0830-1230
		2nd	1000-1100	1330-1730
		3rd	1230-1330	
		4th	1500-1600	
		5th	1730-1830	
October PDT	13	1st	0800-0900	0900-1230
		2nd	1000-1100	1300-1700
		3rd	1230-1330	
		4th	1500-1600	
		5th	1700-1800	
November PST	12	1st	0730-0830	0830-1130
		2nd	0930-1030	1230-1530
		3rd	1130-1230	
		4th	1330-1430	
		5th	1530-1630	

APPENDIX III